

---

## Central Valley Regional Water Quality Control Board

17 February 2021

Don Renz Supervising Engineer  
Shasta County Department of Public Works  
1855 Placer Street  
Redding, CA 96001

### **TENTATIVE DRAFT NOTICE OF APPLICABILITY**

**GENERAL ORDER FOR IN-SITU GROUNDWATER REMEDIATION AND  
DISCHARGE OF TREATED GROUNDWATER TO LAND, ORDER R5-2015-0012  
SHASTA COUNTY DEPARTMENT OF PUBLIC WORKS  
BUCKEYE LANDFILL  
SHASTA COUNTY**

The Shasta County Department of Public Works (Discharger) submitted a Notice of Intent (NOI), dated 20 October 2020, requesting coverage under Order R5-2015-0012, Waste Discharge Requirements General Order for In-situ Groundwater Remediation and Discharge of Treated Groundwater to Land (General Order). The NOI proposes a three-month ozone injection pilot study into groundwater at the Buckeye Landfill (Project). Based on information in the submittal, it is our determination that this project meets the required conditions for approval under Order R5-2015-0012. All requirements contained in the General Order are applicable to this Project. The Project is hereby assigned Order R5-2015-0012-XXXX.

A copy of the General Order is enclosed with this Notice of Applicability (NOA) and is also available at the Central Valley Regional Water Quality Control Board (Central Valley Water Board) [Adopted Orders Website](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2015-0012.pdf).  
([http://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/general\\_orders/r5-2015-0012.pdf](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2015-0012.pdf))

### **PROJECT LOCATION**

The Project is located at the Buckeye Landfill, Lake Boulevard, Shasta Lake, Shasta County, Section 35, T32NS, R4W, Mount Diablo Baseline & Meridian as shown on Attachment A. The Project is on assessor's parcel number (APN) 006-610-040.

### **PROJECT DESCRIPTION**

Buckeye Landfill (Site) is a closed landfill owned and operated by the Discharger. The Site began accepting municipal solid waste (MSW) in 1973 within two unlined solid

waste management units (WMUs), referred to as the North Unit and South Unit. In 1982, final closure operations included covering the covered with three feet of compacted, low-permeability soil as final cover. In 2002, the South Unit was covered with a geotextile and geomembrane layer overlain by vegetative-layer soils and was equipped with cover penetrating landfill-gas vents. In 2014, further improvements to both the North and South Units including construction of drainage channels to minimize erosion and repairs to damaged areas of the final covers.

Beginning in 2011, volatile organic compounds (VOCs) including tert-butyl alcohol (TBA) and 1,4 dioxane were detected in groundwater underlying the North Unit and South Unit. In 2017 Central Valley Water Board staff directed the Discharger to conduct a groundwater study to identify VOC sources. The September Groundwater Study Report documented the investigation of several possible sources including leachate, landfill gas, contaminants within well casings, and non-landfill related activities. The Report indicated that high concentrations of methane and TBA were detected in soil gas overlying both the North Unit and South Unit cells. Central Valley Water Board staff directed the Discharger to propose a cleanup method. The Discharger has proposed ozone injection into groundwater. The feasibility of cleanup via ozone injection is to be established via a pilot study.

In August 2018, the Discharger initiated the first phase of the pilot study, which involved air pressure testing to monitor the pressure response in monitoring points located at varying distances from the injection points. The first stage of the pilot study confirmed the feasibility of implementing ozone sparging. Following the installation of a power line to supply power to the ozone treatment area, the Discharger submitted the General Order permitting package which proposes a three month trial period of ozone injection into three of four injection points to collect data regarding preferential flow paths in underlying geology. Existing monitoring wells and the fourth injection point will be used to monitor the treatment zone.

A trailer mounted ozone remediation system will be placed onsite and will be set to deliver ozone at a rate of 26 grams/day at a concentration of six percent by volume and at a pressure of 25 pounds per square inch. Ozone sparging will utilize polytetrafluoroethylene (PTFE) delivery tubing.

Monitoring and reporting during the pilot test will be conducted in accordance with Monitoring and Reporting Program (MRP) R5-2015-0012-XXXX. Constituents of concern (COCs) including VOCs (including TBA and 1,4 dioxane), methane, dissolved ferrous iron and chromium VI will be assessed in monitoring wells prior to ozone injection. Subsequently, COCs will be sampled and analyzed monthly. Groundwater parameters including groundwater elevation, oxidation reduction potential, electrical conductivity, dissolved oxygen, pH and temperature will be assessed in monitoring wells prior to ozone injection. Subsequently, these parameters will be sampled and analyzed on a weekly basis. Additionally, the Discharger will monitor the discharge of ozone into groundwater daily.

Monitoring and reporting requirements identified in MRP R5-2015-0012-XXX are in addition to and separate from requirements identified in MRP R5-2017-0018. Under MRP R5-2015-0012-XXX, data shall be reported electronically to the California State Water Resources Control Board's [GeoTracker Database](https://geotracker.waterboards.ca.gov/) (<https://geotracker.waterboards.ca.gov/>).

## GENERAL INFORMATION AND SITE-SPECIFIC REQUIREMENTS

1. The project will be operated in accordance with the requirements contained in the General Order and in accordance with the information submitted in the NOI and as specified in this NOA.
2. The required annual fee (as specified in the annual billing you will receive from the State Water Resources Control Board) shall be submitted until this NOA is officially revoked.
3. In-situ discharge of materials other than ozone as described in the NOI into the subsurface is prohibited.
4. Injection of ozone into groundwater shall not exceed 26 grams/day as maximum flow.
5. Failure to abide by the conditions of the General Order could result in an enforcement action as authorized by provisions of the California Water Code.
6. Shasta County Department of Public Works and their agents shall comply with the attached MRP R5-2015-0012-XXXX and any revisions thereto as ordered by the Executive Officer.

## DOCUMENT SUBMITTALS

All monitoring reports should be converted to a searchable portable document format (PDF) and submitted electronically to the California State Water Resources Control Boards' [GeoTracker Database](https://geotracker.waterboards.ca.gov/) (<https://geotracker.waterboards.ca.gov/>). Additional information regarding electronic submittals is accessible through the information tab on the GeoTracker homepage.

After uploading a document via GeoTracker, the submitting party shall notify Central Valley Water Board staff via email at: [centralvalleyredding@waterboards.ca.gov](mailto:centralvalleyredding@waterboards.ca.gov), including the following in the body of the email:

Facility Name:	Buckeye Landfill
Program:	Groundwater Unit
Order:	R5-2015-0012-XXXX
CIWQS Place ID:	210646

Patrick DeCarvalho is your point of contact for any questions regarding compliance with the Order. You may contact Patrick at (530) 224-4786 or at [patrick.decarvalho@waterboards.ca.gov](mailto:patrick.decarvalho@waterboards.ca.gov).

Patrick Pulupa,  
Executive Officer

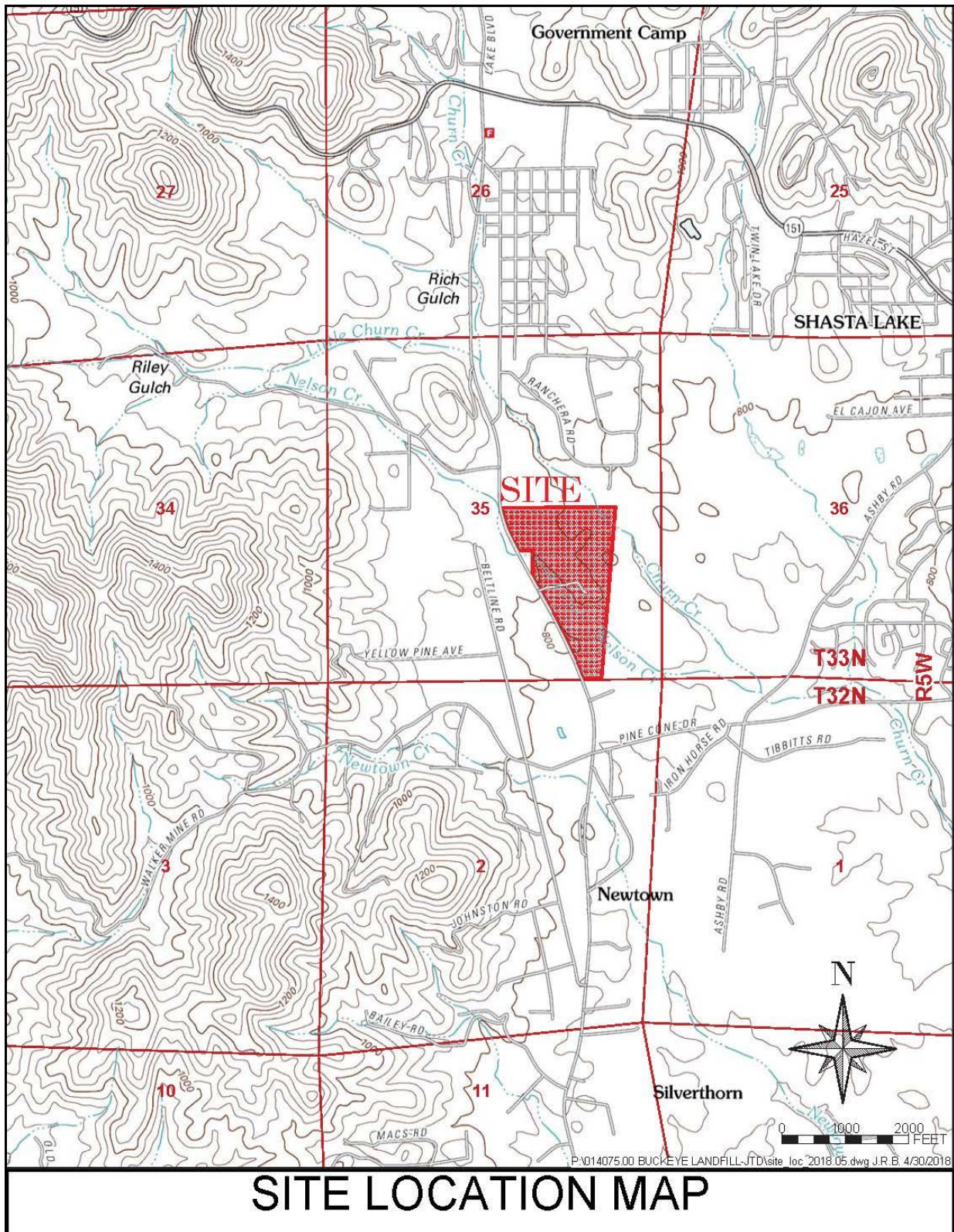
Attachments:

- Attachment A – Site Location Map
- Attachment B – Site Plan and Monitoring Well and Injection Point Location Map
- Attachment C – MRP R5-2015-0012-0XX
- Attachment D – Order R5-2015-0012

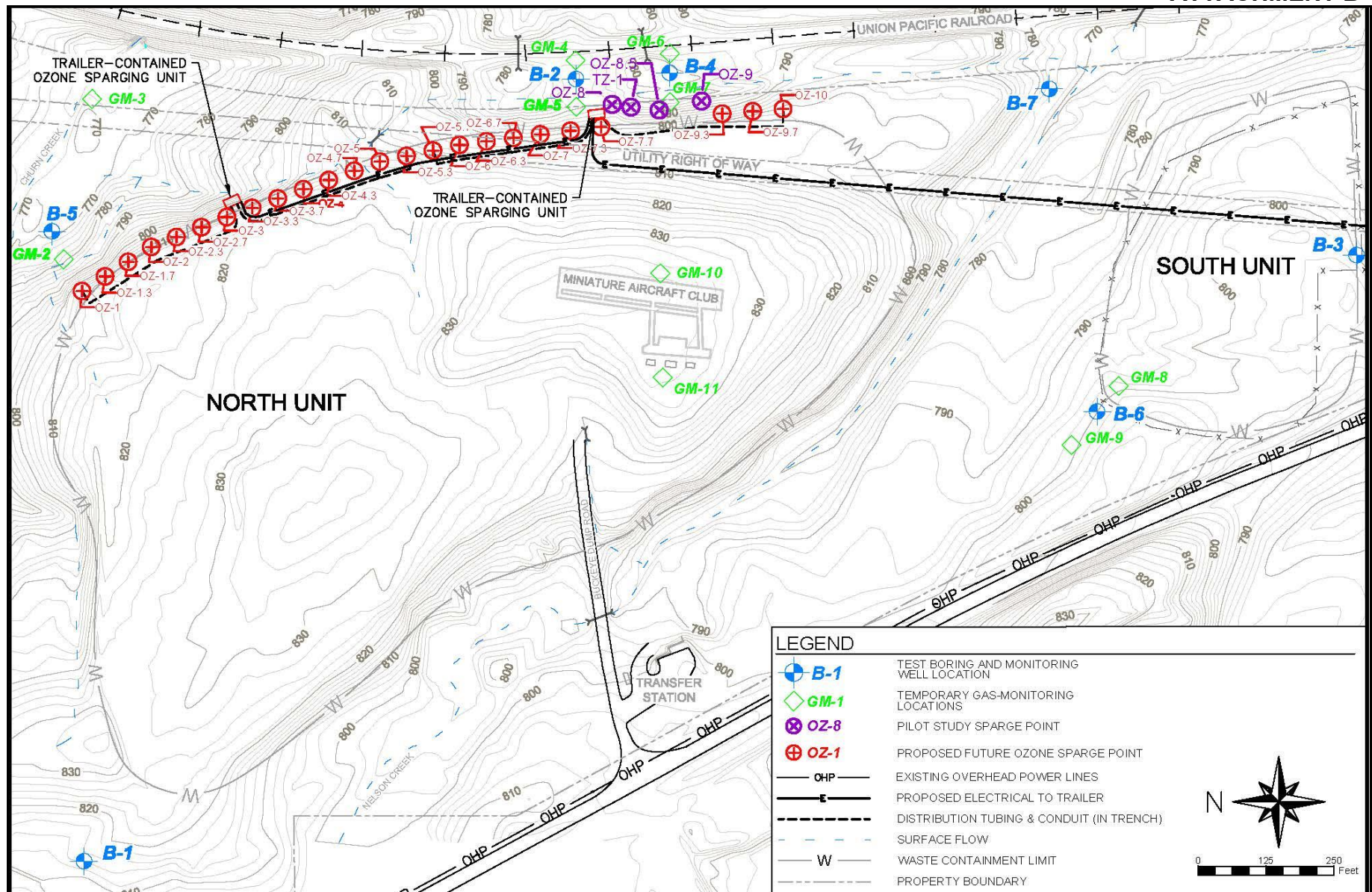
cc via email w/encls.:

Ken Henderson, Shasta County Environmental Health Division, Redding  
Bryan Gartner, Lawrence and Associates, Shasta Lake  
Karl Swanson, Lawrence and Associates, Shasta Lake  
Robert Busby, Central Valley Water Board, Rancho Cordova









# SITE PLAN AND MONITORING WELL AND INJECTION POINT LOCATION MAP